

WHAT IS CLAIMED IS:

1        1. A method for differentiating a cancer risk status of milk ducts in a breast comprising:  
2                aspirating the nipple, and  
3                locating at least one ductal orifice that yields fluid upon aspiration; wherein a duct that  
4                yields fluid upon aspiration is at higher risk for cancer.

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6        2. A method as in claim 1, further comprising accessing the ductal orifice that yields  
7                fluid.

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9        3. A method as in claim 2, further comprising retrieving ductal contents from the  
10                accessed duct.

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12        4. A method as in claim 1, wherein more than one duct yields fluid upon aspiration of the  
13                nipple.

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15        5. A method as in claim 4, wherein each duct that yields fluid upon aspiration is  
16                accessed.

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18        6. A method as in claim 5, further comprising retrieving ductal contents from an  
19                accessed duct.

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21        7. A method as in claim 1, further comprising recording the location of the ductal orifice  
22                once identified by yield of fluid at the orifice.

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24        8. A method as in claim 7, wherein recording comprises one or more of transcribing the  
25                relative location of the ductal orifice on a paper grid, taking a photograph, recording in real time  
26                on a digital screen the fluid yielding event and/or location of the ductal orifice that yielded fluid,  
27                and making a negative imprint on the nipple surface to identify the regions of the nipple that did  
28                not yield fluid.

30           9. A method as in claim 1, further comprising marking the ductal orifice upon yield of  
31        fluid at the orifice.

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33           10. A method as in claim 9, wherein marking comprises making an identifiable mark  
34        with a pen or other labeling device to identify the spot comprising the ductal orifice at a later  
35        time.

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37           11. A method as in claim 9, wherein marking comprises placing an element into the duct  
38        selected from the group consisting of a plug, tube, wire, thread, and suture.

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40           12. A method as in claim 10, wherein the mark resides on the nipple surface in a range of  
41        time from a few hours to a few years.

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43           13. A method as in claim 1, further comprising contacting a ductal orifice that yields  
44        fluid with a dilator in order to accomplish one or more of discerning the precise location of the  
45        orifice, discerning the orientation of the orifice, or enlarging the proximal area of the duct so as  
46        to facilitate subsequent cannulation of the duct.

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48           14. A method for differentiating a cancer risk status of milk ducts in a breast comprising:  
49        aspirating the nipple, and  
50        locating at least one ductal orifice that yields fluid upon aspiration; wherein a duct that  
51        yields fluid upon aspiration is at higher risk for cancer; and  
52        collecting a bead of fluid at the nipple surface generated from aspiration and emerging  
53        from the fluid yielding duct and not mixed with fluid generated from any other duct on the  
54        nipple surface.

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56           15. A method as in claim 14, further comprising analyzing the collected fluid of the duct  
57        yielding fluid separately from the fluid of any other duct yielding fluid.

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59           16. A method as in claim 14, further comprising recording the location of the ductal  
60        orifice on the nipple surface once identified by yield of fluid.

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62        17. A method as in claim 16, wherein recording comprises one or more of transcribing  
63        the relative location of the ductal orifice on a paper grid, taking a photograph, recording in real  
64        time on a digital screen the fluid yielding event and/or location of the ductal orifice that yielded  
65        fluid, and making a negative imprint on the nipple surface to identify the regions of the nipple  
66        that did not yield fluid.

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68        18. A method as in claim 14, further comprising marking the ductal orifice upon yield of  
69        fluid at the orifice.

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71        19. A method as in claim 18, wherein marking comprises making an identifiable mark  
72        with a pen or other labeling device to identify the spot comprising the ductal orifice at a later  
73        time.

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75        20. A method as in claim 18, wherein marking comprises placing an element into the  
76        duct selected from the group consisting of a plug, tube, wire, thread, and suture.

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78        21. A method as in claim 19, wherein the mark resides on the nipple surface in a range of  
79        time from a few hours to a few years.

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81        22. A method as in claim 14, further comprising contacting a ductal orifice that yields  
82        fluid with a dilator in order to accomplish one or more of discerning the precise location of the  
83        orifice, discerning the orientation of the orifice, or enlarging the proximal area of the duct so as  
84        to facilitate subsequent cannulation of the duct.

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87        23. A kit for differentiating a cancer risk status of milk ducts in a breast comprising a  
88        nipple aspiration device, a system to mark and/or record the location of a ductal orifice that  
89        yields fluid upon aspiration, and instructions for use of the kit to differentiate a cancer risk status  
90        of milk ducts in a breast by locating at least one ductal orifice that yields fluid upon aspiration.

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92        24. A kit as in claim 23, further comprising a ductal access tool and further instructions to  
93    access the duct that yields fluid upon nipple aspiration.

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95        25. A kit as in claim 23, wherein the system to mark and/or record the location of the  
96    ductal orifice that yields fluid upon aspiration comprises one or more of a pencil and graph  
97    paper, a camera, a marking tool, a digital recording and imaging device, a system to make a  
98    negative imprint on the nipple surface, and an element to place in the orifice to mark it.

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100       26. A kit as in claim 24, further comprising a dilator.

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102       27. A kit for differentiating a cancer risk status of milk ducts in a breast comprising a  
103    nipple aspiration device, a ductal access tool to access a duct through a ductal orifice that yields  
104    fluid upon nipple aspiration, and instructions for use of the kit to differentiate a cancer risk status  
105    of milk ducts in a breast by locating at least one ductal orifice that yields fluid upon nipple  
106    aspiration and access the duct through its orifice.

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108       28. A kit as in claim 27, further comprising a dilator.

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110       29. A kit for differentiating a cancer risk status of milk ducts in a breast comprising a  
111    nipple aspiration device, a tool to retrieve an emerging bead of fluid at a ductal orifice, and  
112    instructions for use of the kit to differentiate a cancer risk status of milk ducts in a breast by  
113    locating at least one ductal orifice that yields fluid upon nipple aspiration and instructions for  
114    collecting an emerging bead of fluid at the ductal orifice without mixing the collected fluid with  
115    any other fluid yielded from any other duct.

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117       30. A kit as in claim 28, further comprising a dilator.

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119       31. A method of maximizing the likelihood of ductal fluid migrating to the nipple  
120       surface  
121       upon nipple aspiration comprising:  
122       stimulating the breast and/or nipple surface prior to or during nipple aspiration.

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124       32. A method as in claim 31, wherein stimulating comprises placing a wearable device  
125       in contact with the nipple surface.

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